

AMENDMENT AND RESPONSE

Serial Number: 09/652,998

Filing Date: August 31, 2000

Title: CONTAINER CAPACITOR STRUCTURE AND METHOD OF FORMATION THEREOF

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claims.

With respect to assertion (2), claim 67 when originally presented contained recitations of first, second and third bottom electrodes, and “a bit line contact laterally positioned between the first and second memory cell, the bit line contact downwardly extends from a vertical height above a top of the bottom electrode.” In at least Figure 8A, all of the bottom electrodes (20) are shown at the same relative vertical positions in the various structures, and the bit line contact which is placed at area 5 clearly extends downwardly from a vertical height above not only the first but in fact all of the top electrodes.

With respect to assertion (3), claim 67 when originally presented contained the recitation “wherein the top electrode includes a lateral clearance opening above the top of the bottom electrode and around the bit line contact.” To more clearly define which electrode was referred to in the claim, it was amended to recite the “first” bottom electrode. Clear support for the claim language is present in at least Figure 9A which shows clearance opening 45 at the first level. Applicant submits that clear and unambiguous support for the alleged new matter appears in the specification as originally filed, and as such, there has not been any new matter added in the amendments. As such, the objection is improper, and Applicant respectfully requests that it be withdrawn.

Rejections Under 35 U. S. C. § 112

Claims 13, 14, 67 and 68 were rejected under 35 U.S.C. § 112 , first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant traverses this rejection, and submits that the originally filed disclosure contains full support for the elements of the claims. Support for the amendments has been shown above with respect to the objections to the subject matter of the amendments. That support is incorporated herein by reference, but will not be repeated here for the sake of brevity.

The Office Action asserts that the capacitor plate 24C of Figure 12 (although reference numeral 24C does not appear in Figure 12, Applicant presumes that the Office Action is referring

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to the top capacitor plate sections which are broken at the contact plugs 36 in the Figure) “is vertically descent between the second and third bottom capacitor plates.” However, the recitation of the claim is “the top capacitor plate includes a lateral clearance opening at the first level around the contact and does not vertically descend between the first, second and third bottom capacitor plates and the contact.” Clearly from the Figure, the top capacitor plate does not descend between the capacitor plates and the contact. At points, the capacitor plate does descend, but at no point does it do so between the capacitor plates and the contact as is recited in the claim.

The Office Action further asserts that the bit line contact downwardly extends from a vertical height above the contact area only. It is clear from Figure 12 that the top pf the bit line contacts 36 are at a vertical position above that of the top electrode. Therefore, it is unambiguously clear that the bit line contacts 36 extend downwardly from a vertical height above the tops of the first and second bottom electrodes, since there is a clear portion of the bit line contact that is at a vertical position above the tops of the first and second bottom electrodes.

Finally, the Office Action asserts that the lateral clearance opening is formed above the bit line contact area only and not above the top of the first bottom electrode. However, Figure 8A clearly shows opening the opening 45 in the process above a portion of the cop electrode, after which that portion of the top electrode is removed to more clearly define the clearance opening.

Applicant submits that the rejections are improper, that the claims are allowable, and respectfully requests reconsideration and withdrawal of the rejections.

Rejections Under 35 U. S. C. § 103

Claims 13, 14, 67 and 68 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Becker (U.S. Patent No. 5,770,498). Applicant traverses this rejection, and submits that the subject matter of the claims is neither taught nor suggested in Becker.

Claims 13, 67, and 68 recite in pertinent part specific limitations that do not appear nor are they suggested in Becker. Specifically, claim 13 recites “the top capacitor plate includes a lateral clearance opening at the first level around the contact and does not vertically descend

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between the first, second and third bottom capacitor plates and the contact"; claim 67 recites "the top electrode is capacitively coupled to an interior of the first, second and third bottom electrodes and an portion of the exterior of the second and third bottom electrodes located in the trench"; and claim 68 recites "wherein the bit line contact insulation region prevents the top electrode from downwardly extending between the bit line contact and the first and second bottom electrodes." In contrast, none of these limitations appears in Becker. Becker clearly shows the top electrode 50 of each and every capacitor having a portion extending downwardly between the bit line contact and the bottom electrodes 44. The recitation of claim 67 explicitly recites the portions of the bottom electrode containers that have top electrode coverage, and no top electrode coverage of any vertical exterior area between a bottom electrode and a contact is present.

The Office Action fails to state a prima facie case under 35 U.S.C. § 103(a), and Applicant respectfully submits that the claims are allowable.

CONCLUSION

In view of the above remarks, Applicant respectfully submits that all claims are in condition for allowance and requests reconsideration of the application and allowance of claims.

The Examiner is invited to contact Applicant's attorney to discuss any questions that may remain with respect to the present application.

Respectfully submitted,

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By their Representatives,

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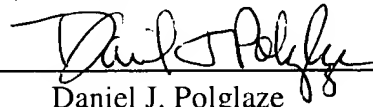
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